MINUTES OF DOT-AGC BRIDGE DESIGN SUBCOMMITTEE MEETING

The DOT-AGC Joint Bridge Design Subcommittee met on April 9th, 2003. Those in attendance were:

Greg Perfetti	State Bridge Design Engineer (Co-Chairman)
Berry Jenkins	Manager of Highway Heavy Division, Carolinas Branch AGC (Co-Chairman)
Ron Hancock	State Bridge Construction Engineer
Mark Lively	Crowder Construction Co.
Bryan Long	Dane Construction
Kevin Burns	R. E. Burns & Sons Co.
Tom Koch	Structure Design Project Engineer
Paul Lambert	Structure Design Project Engineer
Victor Chao	Structure Design Engineer
Allen Raynor	Assistant State Bridge Design Engineer
John Erwin	Structure Design Project Design Engineer (Secretary)

The following items of business were discussed:

1. The minutes of the February 19th meeting were accepted.

2. *Railroad Issues*

   Mr. Raynor updated the committee on the following railroad issues:

   - The Structure Design Webpage has been updated to include a site for railroad issues including construction guidelines for CSX projects. The site is: http://www.doh.dot.state.nc.us/preconstruct/highway/structur/RAILROAD/RAILROAD.htm
   - A new project special provision for CSX projects has been submitted to CSX for approval. The new special provision contains verbiage similar to that of NYDOT.
   - The Department continues to incur delays in getting approval from CSX. Therefore, contractors should account for this extra time and submit their bridge demolition and girder erection procedures well in advance.

   Mr. Burns asked if the Department was allowing any additional contract time for railroad projects in lieu of prolonged approval times. Mr. Hancock stated that it seemed reasonable to add some amount of additional contract time for railroad approvals. Mr. Jenkins requested that the Department investigate adding contract time to all CSX railroad projects in order to give adequate time for approvals. *Structure Design committed to investigating this proposal.*

3. *Overhang Falsework Standardization*

Mr. Erwin distributed a handout of standardized overhang falsework design tables. Mr. Erwin reviewed a sample design procedure and asked the committee for comments. Mr. Lambert stated that recently his group had reviewed the design tables using 20 examples from the past and no inconsistencies with past approvals were noted. Mr. Burns asked if the designs performed using these charts would require a PE seal. Mr. Perfetti stated that although it would be preferable not to require a seal, it would be necessary to discuss this issue with FHWA.

Mr. Hancock stated that initially the contractor would submit a design form (similar to what is done for standard shoring) to Structure Design for approval. Eventually, there is a possibility that the designs could be approved in the field.

Mr. Long reviewed the overhang falsework details and asked if it was necessary for (3) 2"x4" joist to be located under the screed rail. Mr. Chao stated that in most cases 2 joist were sufficient but some of the larger bracket spacing found in the chart would require 3 joists. Mr. Perfetti suggested that a note be added to the plan sheet stating that for a given bracket spacing and below, (2) 2"x4" joists under the screed rail would be allowable. Mr. Chao agreed to investigate the allowable bracket spacing for this note.

Mr. Erwin stated that the next step in standardization of overhang falsework would be to complete design tables for spacing of temporary steel diaphragms. Mr. Perfetti asked if there would be a benefit to releasing the existing design tables for bracket and hanger spacing prior to that of temporary steel diaphragms. After some discussion, it was concluded that once the temporary steel diaphragm tables were complete, both design tables would be released together.

3. *Approach Slabs*

Mr. Hancock stated that he recently polled the Division Construction Engineers about the need for asphalt on the approach slabs to provide better maintenance options when future settlement occurred. Mr. Hancock stated that the DCE's agreed that the asphalt was needed for maintenance and requested that it remain on the detail. Mr. Hancock stated that for integral abutments the asphalt on the approach slab presented a problem for detailing the joint. Mr. Perfetti suggested that the Soils and Foundation Unit identify sites that had potential for long term settlement and disallow the use of integral abutments at those sites. At sites where settlement is not an issue, integral abutments could be used without the asphalt overlay detail.

Mr. Erwin stated that on integral abutments, the approach slabs are required to be longer (i.e. approximately 20'-25') and asked if there were any construction issues with lengthening the approach slab. Mr. Burns stated that the contractor would be forced to use a mechanical screed to finish the approach slab but this was not a problem. However, if the approach slab has an asphalt recess, screeding would be very difficult. Mr. Perfetti restated that for integral abutments, asphalt would not be detailed on the approach slabs.

Mr. Perfetti asked the committee if there would be any objections to requiring a concrete subbase under the approach slabs of integral abutments instead of the asphalt or stone base options currently allowed. Mr. Burns stated that most contractors use concrete anyway because compaction is difficult to achieve using asphalt or stone. Mr. Perfetti stated that for integral abutments, a concrete subbase would be required with minimum reinforcement. In addition, roofing felt separating the subbase from the approach slab would be required to allow movement of the approach slab.

Mr. Burns asked if the approach slab could be squared off at the end and made perpendicular to the roadway centerline. After some discussion, it was decided that this idea was beneficial and Structure Design would implement this detail on integral abutment projects.

4. *Other*

i. Culvert Staging and Diversion

Mr. Hancock stated that currently on staged culvert plans, a staging sequence and diversion plan is designed and shown on the plans and the permit. However, the contractor typically requests to alter the staging and diversion sequence and is required to submit the change for permit approval. Subsequently, the contractor and the resident dispute payment options based on what was bid and what work was actually performed. Mr. Hancock asked if it would be beneficial to continue to show staging and diversion plans but to create a lump sum pay item entitled "stream diversion". After some discussion, it was decided that a lump pay item entitled "stream diversion" should be shown on the plans. The cost for impervious dikes, pipes, and stream diversion would be included in this pay item. A note on the plans would also be added informing the contractor that the staging and diversion shown on the plans had been permitted but an option to submit an optional plan was permissible if permits were obtained. Mr. Hancock stated that he would seek feedback from several culvert contractors and also ask Mr. Powell (State Roadway Construction Engineer) to discuss the issue at the next AGC/DOT Roadway Committee Meeting.

Mr. Hancock also asked the contractors about wrapping foundation conditioning material with filter fabric for cast-in-place culverts, which will be required for precast culverts. After some discussion, the committee agreed that this would not be necessary for cast-in-place culverts.

ii. Next Meeting

The next meeting is scheduled for June 11th at 10:00 a.m. in the Structure Design Unit Conference Room C.